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Application No. 10/730,223

Docket No.: S9025.0331

REMARKS

Applicants appreciate the Examiner's renumbering of claims. The foregoing amendments correct the internal dependency of those renumbered claims.

Claims 3, 6-10, 13, 14, 18-28, 34 and 35 are rejected under 35 U.S.C. § 112, second paragraph.

Claims 1-3, 5-8, 10-13, 15-27, 29-34, and 36 are rejected under 35 U.S.C. § 102(b) as being anticipated by GB 1424517.

Claims 4, 9, 14, 28 and 35 are rejected under 35 U.S.C. § 103(a) as being unpatentable over GB 1424517.

Claims 1-36 are rejected under 35 U.S.C. § 103(a) as being unpatentable over GB 1424517 in view of GB 1108261.

Claims 1-15 and 30-36 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Johnson *et al.* (U.S. Patent No. 7,056,962; hereafter "Johnson").

The specification is herein amended for clarification purposes, in particular, to distinguish the pigments (*i.e.*, colorants) that are not a structural part of the colored dispersant and the pigments (*i.e.*, organic chromophores (A)) that are a structural part of the colored dispersant. Support for the amendments can be found, for example, in Example 8 at page 10 of the present specification and original claim 24.

Claims 11-15 and 23 are herein cancelled.

Claims 2-10, 16-22, and 24-36 are herein amended.

No new matter has been introduced by the amendment.

Reconsideration of the present application in view of the foregoing amendments and the remarks below is respectfully requested.

Application No. 10/730,223

Docket No.: S9025.0331

**Claim Objection**

The numbering of the claims is objected to under 37 C.F.R. § 1.126. In light of the renumbering and dependency correction, Applicants respectfully request that the claim objection be withdrawn.

**Claim Rejections under 35 U.S.C. § 112**

Claims 3, 6-10, 13, 14, 18-28, 34 and 35 are rejected under 35 U.S.C. § 112, second paragraph.

(a) Claims 3, 8, 13, 27 and 34 are indefinite with regard to what B encompasses.

Claim 13 is herein cancelled and the rejection thereof is now moot.

Claims 3, 8, 27 and 34 are herein amended to recite that "B is a moiety **comprising** O, N, or S." (emphasis added).

In this connection, the specification is also amended at page 5, lines 8-10 for clarification purposes. Support for the amendment can be found, for example, in the same paragraph, where it states that "[i]t is preferred that the linking moiety contains an amino group." As an "amino group" does not contain O or N, it is clear that the conjunctive term "or", rather than "and", was intended between the terms, "N" and "S". Support can be also found in Examples 1-7 of the present specification, and original claims 3, 8, 27 and 34.

Accordingly, the rejections under this section should be withdrawn.

(b) Claim 6 is indefinite because the phrase, "highly dispersed colorant dispersion", makes the scope of the claim indefinite.

Claim 6 is herein amended to delete the term "highly dispersed". Accordingly, the rejection under this section should be withdrawn.

Application No. 10/730,223

Docket No.: S9025.0331

(c) Claim 9, 14, 28 and 35 are each indefinite as to what "X" is or what is meant by reciting that "X is C<sub>100</sub> to C<sub>150</sub>."

Claim 14 is herein cancelled and the rejection thereof is now moot.

Claims 9, 28 and 35 are each herein amended to recite "wherein X is a branched or linear C<sub>100</sub> to C<sub>150</sub> polymeric covalently linked hydrocarbon", as the Examiner suggests. Accordingly, the rejection under this section should be withdrawn.

(d) Claim 12 is indefinite as reciting an improper Markush group.

Claim 12 is herein cancelled and the rejection thereof is now moot.

(e) Claim 18 is indefinite because it is not clear what "colorant" is being referred to - pigment, the organic chromophore, or both.

In the present specification, a pigment which serves as "A" of the polymeric colored dispersant having the structure A-(B-X)<sub>n</sub> of the present invention is generically referred to as an "organic chromophore" (see, for example, page 3, line 22; page 4, lines 21 and 25; and so forth). In contrast, a pigment or dye, which serves as a colorant in the colorant dispersion of the present invention is generically referred to as a "colorant" as the term "colorant dispersion" itself indicates (also see, for example, page 3, line 30).

Thus, the term colorant in claim 18 refers to the pigment in the dispersion other than the organic chromophore of the polymeric colored dispersant. Support for this construction can be found at page 5, lines 23-26. For clarification purposes, claim 16, from which claim 18 depends, is also herein amended to recite "(a) at least about 45 wt.% of a **colorant, based on the total weight of the dispersion**" (emphasis added) (see page 3, lines 30-31).

Accordingly, the rejection of claim 18 under this section should be withdrawn.

Application No. 10/730,223

Docket No.: S9025.0331

(f) Claim 19 is indefinite "because it is not clear what 'colorant' is being referred to."

Claim 16, which claim 19 depends from, is herein amended to replace the term "pigment" with "colorant." Support can be found at page 3, lines 30-31.

Accordingly, it is clear that the term "colorant" refers to the component (a) of claim 16 and the rejection of claim 19 under this section should be withdrawn.

(g) Claim 23 is indefinite because it is identical to claim 18.

Claim 23 is herein cancelled.

Accordingly, the rejection is now moot.

(h) Claim 24 is indefinite "because it is not clear what 'colorant' is being referred to."

Claim 16, which claim 24 depends from, is herein amended as discussed above.

Accordingly, it is clear that the term "colorant" refers to the component (a) of claim 24 and the rejection of claim 19 under this section should be withdrawn.

(i) Claim 25 is indefinite because "[t]he scope of the claim is confusing given that it is not clear what is meant" by the phrase "wherein said dispersant is present in about 10 wt.% of the pigment."

Claim 25 is herein amended to recite "wherein said dispersant is present in about 10 wt.% based on the weight of the colorant." Support can be found, for example, in Example 8 at page 10 of the present specification, where 5 parts of dispersant were combined with 50 parts of pigment (i.e., non-organic chromophore pigment; that is, colorant). Thus, the dispersant is "10 wt.% based on the weight of the colorant" (also see at page 7, lines 15-16). Claim 25 is indirectly dependent from claim 16, in which the

Application No. 10/730,223

Docket No.: S9025.0331

term "pigment" has been amended to recite "colorant", as supported at page 3, lines 30-31.

Accordingly, the rejection of claim 25 should be withdrawn.

In view of the above amendments, Applicants respectfully request that all rejections under 35 U.S.C. § 112, second paragraph, be withdrawn.

**Claim Rejections under 35 U.S.C. § 102**

Claims 1-3, 5-8, 10-13, 15-27, 29-34 and 36 are rejected under 35 U.S.C. § 102(b) as being anticipated by GB 1424517.

Claims 11-13, 15 and 23 are herein cancelled and the rejection of these claims are now moot.

Specifically, the Office Action states that "GB 1424517 discloses dispersion as presently claimed including polymer as presently claimed" and that "it is clear that the dispersion is inherently highly dispersed and has improved color strength as presently claimed."

Applicants respectfully traverse the rejection.

The polymeric colored dispersant of the present invention is represented by the structural formula of A-(B-X)<sub>n</sub>, wherein (A) (organic chromophores) may be organic pigments, dyes or carbon black; (B) is a covalently bonded linking moiety containing O, N or S, and (X) is a branched or linear ***C<sub>50</sub> to C<sub>200</sub> polymeric covalently linked hydrocarbon.***

GB 1424517 discloses a dispersing agent of the formula D-(Z-R)<sub>n</sub>, wherein "R" is asserted to correspond to "X" of the dispersant of the present invention. The residue R may be derived from any addition polymer or copolymer, in particular, those carrying a ***terminal carboxyl group*** in the form of its sodium or potassium salt (see

Application No. 10/730,223

Docket No.: S9025.0331

page 2, line 107 through page 3, line 23; and page 4, lines 76-79). Thus, the residue R of GB 1424517 is not a hydrocarbon as is "X" of the present invention.

Although the Examiner points to the description at page 5, lines 23-33, of GB 1424517 (describing polymer C) and calculates the number of carbons based on the molecular weight of the polystyrene, the molecule is carboxyl-terminated and is not a hydrocarbon. The assumption that polymer C is polystyrene is wrong. The polymer is apparently at least a copolymer of butyl acetate and styrene and such a copolymer is not a hydrocarbon, and therefore, the calculation in the Office Action is moreover based on an incorrect assumption. GB 1424517 does not teach or even suggest that "R" be a branched or linear  $C_{50}$  to  $C_{200}$  polymeric covalently linked hydrocarbon..

The disclosure of the dispersant and dispersion in the British patent is quite broad and includes many aspects which are outside the scope of the present invention. For example, the polymer can be a polyalkylene oxide (page 1, lines 68-69) which, of course, is not a hydrocarbon. A generic disclosure without a disclosure of a species falling within the claims under consideration, which is the case here, is not anticipatory. *Corning Glass Works v. Sumitomo Electric U.S.A. Inc.*, 9 USPQ2nd 1962, 1970 (Fed. Cir. 1989).

There are several claims rejected on the grounds of anticipation for which the basis is not apparent. For example, some claims specify n as 1 or 2 but other than the generic disclosure in the reference, no species having this feature has been identified. Similarly, no basis for the dispersion having a viscosity of less than about 150 Pa.s. has been set forth nor has a basis for the dispersion containing about 65 wt.% of the colorant been identified. No disclosure of printing inks or a particular type of printing ink has been identified.

Accordingly, none of claims 1-3, 5-8, 10, 16-22, 24-27, 29-34 and 36 is anticipated by GB 1424517 and the rejections of these claims under 35 U.S.C. § 102(b) as being anticipated by GB 1424517, should be withdrawn.

Application No. 10/730,223

Docket No.: S9025.0331

**Claim Rejections under 35 U.S.C. § 103(a)**

(1) Claims 4, 9, 14, 28 and 35 are rejected under 35 U.S.C. § 103(a) as being unpatentable over GB 1424517. Applicants respectfully traverse the rejection.

Claim 14 is herein cancelled and the rejection of claim 14 is now moot.

The applicability of the British patent has been discussed above and is equally applicable to this rejection. Two additional comments are appropriate. First, the Office Action's conclusion that the polymer can contain up to 1538 carbon atoms is based on the same erroneous assumption that the polymer is polystyrene. Second, the assertion that "it would have been within the skill level of one of ordinary skill in the art to choose the size of the polymer" is "an inappropriate standard for obviousness" *Ex parte Levengod*, 28 USPQ2d 1300, 1301 (BPAI 1993).

Accordingly, claims 4, 9, 28 and 35 are not obvious over GB 1424517 and the rejection of these claims under 35 U.S.C. § 103(a) as being unpatentable over GB 1424517 should be withdrawn.

(2) Claims 1-36 are rejected under 35 U.S.C. § 103(a) as being unpatentable over GB 1424517 in view of GB 1108261.

Claims 11-15 and 23 are herein cancelled and the rejections of these claims are not moot.

The applicability of GB 1424517 has been discussed above. GB 1108261 is referenced in the first British patent only for its description of polyalkylene oxides at lines 26-28 of page 2. There is no basis or motivation for looking at other parts of '261 reference in that the dispersant of this additional reference is quite different from that of the first British patent. The use of hindsight to select bits and pieces is not proper.

Accordingly, claims 1-36 not obvious over GB 1424517 in view of GB 1108261 and the rejection of these claims under 35 U.S.C. § 103(a) as being unpatentable over GB 1424517 in view of GB 1108261 should be withdrawn.

Application No. 10/730,223

Docket No.: S9025.0331

(3) Claims 1-15 and 30-36 are rejected under 35 U.S.C. § 103(a) over Johnson. This rejection is also respectfully traversed.

The Johnson patent relates to modified pigments in which a pigment has an attached group of the formula -X-(nonionic group)<sub>p</sub>R in which R represents hydrogen, an alkyl group or an aromatic group and p is an integer from 1 to 500. Where R is hydrogen and also where R can represent a polymer such as polyvinylchloride, polycaprolactam, polyester, polyether, polyamide, polymers containing sulfur, etc., none of which are hydrocarbons, the modified pigment of Johnson is clearly outside the scope of the rejected claims. Nothing would motivate a skilled person to make selections leading to a material which is similar to the instant claims without using hindsight and the present claims as a template, neither of which is proper. No specific species falling within the scope of these claims has been identified. While the Office Action makes a calculation based on the possibility there can be 500 repeating units and R might constitute isobutylene, it is apparent that this selection and calculation has been made with hindsight. Moreover, the material of Johnson is a pigment and not a dispersant. It is therefore respectfully submitted that the obviousness rejection is clearly based on hindsight without any direction or motivation to make the selections proposed in the Office Action. This is not adequate to justify a rejection under Section 103.

Accordingly, claims 1-15 and 30-36 are not obvious over Johnson and the rejection of these claims under 35 U.S.C. Section 103(a) as being unpatentable over Johnson should be withdrawn.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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Application No. 10/730,223

Docket No.: S9025.0331

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